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Developing the Next Generation 12+ MW Offshore Wind Turbine for Clean and Competitive Electricity

Schedule and cost assessment of different access vessel for crew transfer

The impact on schedule and on cost has been assessed within WP2[1] for platform access operations performed using a Crew Transfer Vessel (CTV) operating in wave Hs 2.0 m versus a Service Offshore Vessel (SOV) fitted with a Walk to Work system operating in Hs 3.0 m. The main conclusions about this task performed by Principle Power (inputs) and BIBA (modeling and simulation) are presented here. The results depend on the operation considered. The SOV solution is relevant for Inter-Array Cable (IAC) installation. Overall, the SOV improves the workability, but since a more expensive vessel is used, cost savings are limited for hook-up and costs go up for offshore commissioning compared to the baseline scenario using the CTV.

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Accessing platform during hook-up

The SOV is assumed to be used not only for crew transfer but also for platform hook-up to its mooring lines. Although the workability is improved, the hook-up schedule is driven by the WTG integration rate so the overall campaign duration remains similar. However, the cost of the operation is slightly reduced as there is one less vessel (the CTV) compared to the baseline.

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Accessing platform during IAC installation

An SOV is mobilized, instead of a CTV, in addition to the Cable Laying Vessel to perform the crew transfers during IAC pull-in and IAC stripping and testing operations. This strategy improves the workability of the operation, and the IAC installation schedule is reduced by 33% when considering weather. Associated cost is also reduced by 12%.

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Accessing platform during offshore commissioning

An SOV is mobilized, instead of two CTVs, to perform the crew transfers during offshore commissioning activities. Although the workability is improved, similar schedule performance is obtained in one or the other strategy. However, cost is increased by 61% due to the use of a much more expensive vessel.

Source
1. Deliverable 2.2 Simulation report for baseline concept, ReaLCoE, Rev1.0, 30.04.2023 (Confidential, only for members of the Consortium including the Commission Services).

ReaLCoE´s Vision

ReaLCoE´s vision is to unleash the full potential of offshore wind energy to be in direct competition with conventional energy sources in electricity markets worldwide by optimising and innovating in every link of the offshore wind value chain: from initial turbine design to equipment handling in the port, from testing to financing installation and providing electricity to final customers.

ReaLCoE Project

€35/MWh
LCoE Goal

+12MW
WEC Capacity

€32.320.049,49€
Total Budget

42 months
Project Duration

Consortium

GE VERNOVA · Principle Power · DNV·GL · JBO Engineering Group · JAN DE NUL · 8.2 The Experts in Renewable Energy · EnBW · Ingeteam · Fraunhofer IWES · DTU Technical University of Denmark · TNO innovation for life · BIBA · wood.

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Further information about the ReaLCoE Project can be found on our website: www.realcoe.eu.

ReaLCoE